



# Federal Aviation Administration

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## Memorandum

Date: JUL 28 2006

To: Regional All Weather Operations (AWO) Program Managers  
From: Manager, Flight Technologies and Procedures Division, AFS-400  
Prepared by: Jack Corman, Flight Procedure Standards Branch, AFS-420  
Subject: Transponder Landing System (TLS) Obstacle Evaluation Criteria

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This memorandum provides guidance for the procedure design and obstacle clearance evaluation of TLS instrument approach procedures and supersedes all previous guidance.

For TLS procedures designed with non-area navigation (RNAV) transitions to and from the final segment, use Federal Aviation Administration (FAA) Order 8260.3B, *United States Standard for Terminal Instrument Procedures (TERPS)*, Volume 3, for procedure design and obstacle evaluation. Use chapter 3 for the final and missed approach section 1 evaluations.

For TLS procedures designed with RNAV transitions to and from the final segment, use FAA Order 8260.54, *United States Standard for Area Navigation (RNAV)*, for procedure design and obstacle evaluation. Use chapter 5 for the final segment evaluation and chapter 6 for missed approach evaluation.

The following restrictions apply to TLS procedures.

1. The TLS is certified for glidepath angles from 2.5° through 4.0°.
2. The intermediate fix (IF) must be defined by NAVAIDs not associated with the TLS. The IF must be on the final approach course. Establish a holding pattern at the IF (based on the inbound course to the IF) for use in the event the TLS azimuth course is not acquired.
3. The minimum HAT is 350 feet. For aircraft using diversity transponder antennas, the minimum height above touchdown (HAT) value varies with the aircraft fuselage diameter and maximum longitudinal antenna separation. The following table lists the minimum HAT values.

Fuselage Diameter	Max Longitudinal Antenna Separation	Minimum HAT
≤ 9 feet ≤ 2.7 meters	10 feet	350
> 9 ≤ 12 feet > 2.7 ≤ 3.7 meters	15 feet	480
> 12 ≤ 15 feet > 3.7 ≤ 4.7 meters	20 feet	610
> 15 ≤ 20 feet > 4.7 ≤ 6.0	25 feet	810

The normal Order 8260.19, Flight Procedures and Airspace, chapter 4, processing for Special approach procedures applies except TLS procedures are processed through AFS-420 instead of the National Flight Procedures Group (formerly AVN-100).

Order 8400.14, *Air Carrier IFR Approval for Transponder Landing System Special Category I Approaches*, is supplemented as follows:

Chapter 4, paragraph 4-1e. “After the TLS procedure request is made by the applicant to the POI, it must be forwarded to the AWO for RAPT processing. The AWO and AFS-420, Flight Procedure Standards Branch, will assist the assigned Flight Standards inspector in advising the applicant operator in the formulation of the TLS approach procedure.”

Chapter 4, paragraph 4-1g(4). “The draft TLS instrument approach is a key factor in any application for operational use of TLS under instrument conditions and in any subsequent operational suitability evaluation. It should be as complete and close to the final product as possible. This means that it should entail at a minimum: a frequency to be used, a final approach course, a missed approach, an initial approach fix (IAF) if appropriate, a final approach fix (FAF), a correct name for the approach, the controlling authority, a set of minimums to fly as well as terrain and obstacle information and minimum safe altitudes. The initial draft approach may come from any source, but the final product must be approved by AFS-400. It will then be coordinated with the regional AWO for use in the operational evaluation. Forward the draft TLS instrument procedure to AFS-420 for quality control purposes and evaluation prior to use in any facility operational suitability evaluation. This step is mandatory for purposes of obtaining Flight Standards approval and potential acceptance by the Air Traffic Services.”